small bowel contents (for example, bile acids, cholesterol) to large bowel mucosa; such altered gastrointestinal metabolism might predispose to anorectal carcinoma just as dietary changes are thought to predispose to colorectal carcinoma. The role of microflora and bile acids in producing carcinogens or co-carcinogens from substrate in the gut has yet to be elucidated. Finally, the fatty acids and bile acids present in the severe diarrhea could be irritating enough to large bowel mucosa to serve as preliminary antigenic stimulants to a chronic inflammatory response which subsequently becomes dysplastic.

Patients who have had a jejunoileal bypass operation for obesity commonly suffer anorectal complaints. This discovery of anorectal carcinoma in one such patient underscores the importance of an adequate physical examination and workup. Although the occurrence of anal carcinoma in this patient may have been unrelated to the jejunoileal bypass procedure, several sequelae of jejunoileal bypass may predispose to colorectal and anal malignancy.

SALLY VOSS, MD
THOMAS R. RUSSELL, MD
Department of Surgery
Presbyterian Hospital of Pacific Medical Center
Box 7999
San Francisco, CA 94120

REFERENCE

1. Drenick EJ, Wollman JS: Treatment of proctitis after jejunoileal bypass operations. Am J Clin Nutrition 1980; 33:452-456

Familial Hiatal Hernia

TO THE EDITOR: Congenital diaphragmatic defects have been reported to be familial.[1,2] On the other hand, hiatal hernia has generally been regarded as a sporadic nongenetic malformation with practically no risk of recurrence in subsequent pregnancies. A family with six affected persons is presented here. To my knowledge, this is the first report of familial occurrence of hiatal hernias.

A 13-month-old child had a long history of persistent regurgitation dating from the newborn period. She had four to five regurgitant episodes per day. The regurgitation was worse when she was in a horizontal position. She was a product of an uncomplicated pregnancy, full-term normal spontaneous delivery. Birth weight was 3,180 grams. Past health was unremarkable. Paternal great-grandfather, grandmother, grandaunt as well as maternal great-grandmother, grandmother and grandaunt had sliding hiatal hernias confirmed radiologically. Paternal grandaunt, maternal great-grandmother and maternal grandaunt had operative repair of hernias done. The rest of the affected family members were treated with antacids. There is no consanguinity. Physical examinations of the patient showed no abnormalities. Radiographic barium contrast studies of the upper gastrointestinal tract showed pronounced gastroesophageal reflux to the level of the cricopharyngeus.

Hiatal hernia has a multifactorial mode of inheritance although the specific cause is unknown. Most reviews fail to mention the possibility of familial occurrence. The above cases suggest a hereditary factor in the genesis of hiatal hernia. As with other patients with hiatal hernias, the index patient has gross gastroesophageal reflux. Whether this will lead to a sliding hiatal hernia at a later date, for example, through an esophageal stricture formation, is unknown. With such a strong family history, this possibility cannot be excluded.

ALEXANDER K.C. LEUNG, MBBS, FRCP (C)
Clinical Assistant Professor in Paediatrics
Alberta Children's Hospital
The University of Calgary
1820 Richmond Road SW
Calgary, Alberta, Canada T2T 5C7

REFERENCES

1. Norio R, Kaarlainen H, Rapola J, et al: Familial congenital diaphragmatic defects: aspects of etiology, prenatal diagnosis and treatment. Am J Med Genet 1984; 17:471-484

2. Wolff G: Familial congenital diaphragmatic defect: Review and conclusions. Hum Genet 1980; 54:1-5

Designing New Devices for Measuring Blood Pressure

TO THE EDITOR: In their excellent clinical article on effect of stethoscope pressure on blood pressure measurement,[1] Londe and Klitzner did not examine newer devices for blood-pressure monitoring such as digital readout home blood pressure cuffs and Doppler cuffs that do not use a stethoscope but nevertheless do apply a sensor to the skin under pressure. Would these devices also result in artifactual decrease in diastolic blood pressure readings? Judging from the data presented, one would assume that if these instruments were designed so that less than 10 mm of mercury pressure would always be applied by the sensor, they would appear to have a potential advantage in uniformity over fallible human hands—a considerable advantage in blood pressure screening projects of all kinds. One would hope that manufacturers of these new high-tech wonders will take Londe and Klitzner's work into consideration in future design and manufacturing processes.

JOHN M. GOLDENRING, MD, MPH
Student Health Service
Loyola Marymount University
Loyola Blvd at W 80th St
Los Angeles, CA 90045

REFERENCE

1. Londe S, Klitzner TS: Auscultatory blood pressure management—Effect of pressure on the head of the stethoscope [Clinical Investigation]. West J Med 1984 Aug; 141:193-195

Private Sector Financing for Medical Education

TO THE EDITOR: Mr Barna astutely noted in his July letter[1] that there seems to be a "physician glut and a coexisting and paradoxical physician shortage." I agree that the production of more physicians will "filter down" fewer doctors for Tulelake than for Beverly Hills. However, few physicians in training base their future practice locale or their specialty choice on the size of their educational debt. Most students are too inundated with scientific esoterica to be concerned with such economic "facts." Our economic naivete is manifest in that there are much better ways for intelligent people to make money than practicing medicine.

Mr Barna also pointed out that the California AHEC program results section did not designate actual numbers of physicians settling in underserved areas. Most physician manpower decisions are based on this type of physician census and physician/population ratios which are inaccurate representations of physician "supply." Ratios exclude such issues as inner city problems of accessibility to professional medical care. A census implies equal productivity for each individual